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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,749	04/11/2001	William McFarland	073169 0269527	2909

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EXAMINER

WANG, TED M

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,749

Applicant(s)

McFARLAND ET AL.

Examiner

Ted M Wang

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-89 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 62-71 and 78-80 is/are allowed.
- 6) ☒ Claim(s) 1,5-12,39-42,57-61,72,73,76,82,84 and 86-89 is/are rejected.
- 7) ☒ Claim(s) 2-4,13-38,43-56,74,75,77,81,83 and 85 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed on 11/2/2004, have been fully considered but they are not persuasive. The Examiner has thoroughly reviewed Applicants' arguments but firmly believes that the cited reference to reasonably and properly meet the claimed limitations.
2. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "Antecedent basis of the claim requires that the setting of the gain and amplification of data with the appropriate gain must happen within the same data packet" or "vary gain based on the encoding bits of the same packet.") are not recited in the rejected claims 1, 39, 72, 73, and 84. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).
3. *Applicants' argument* – "the requirements of claim 1 are not taught or suggested by the (admitted prior art) APA as exemplified by FIG. 1. As explicitly set forth in the specification at page 6, line 18 to page 7, line 2. The specification acknowledges (see the present specification at page 7, lines 3-10) that other types of receiver can continuously vary the gain based on incoming signals, which gain change may by happenstance occur in the middle of a symbol. However, such receivers do not operate to determine an appropriate gain by decoding the encoding bits within a symbol".

Examiner's response -- In response to applicant's argument that the cited APA does not teach or suggest those limitations of "such receivers do not operate to determine an *appropriate gain* by decoding *the encoding bits* within a symbol", the APA teaches "Gain control circuit (AGC) 220 detects the magnitude of the I and Q phases of the detected baseband signal output from the IQ detector 216 during the short training symbol sequence thereof and uses the detected magnitude to adjust the gain of the gain control amplifier 214, which meets the limitation of "operate to determine an *appropriate gain* by decoding *the encoding bits* within a symbol".

Drawings

4. The informal drawings are not of sufficient quality to permit examination. Accordingly, replacement drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to this Office action. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Applicant is given a TWO MONTH time period to submit new drawings in compliance with 37 CFR 1.81. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). Failure to timely submit replacement drawing sheets will result in ABANDONMENT of the application.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

6. Claims 1, 5-12, 39-42, 57-61, 72, 73, 76, 82, 84, and 86-89 are rejected under 35 U.S.C. 102(a) as being anticipated by the admitted prior art of the instant application.

- In regard claim 1, the admitted prior art of the instant application discloses a multi-carrier receiver with method of the following steps:
 - locating the one symbol (Fig.1 and Fig.2 elements 210-224 and page 5 lines 4-22);
 - decoding the encoding bits of the one symbol (Fig.2 elements 224-232 and page 5 line 20 – page 6 line 13);
 - setting the gain of the receive path amplifier (Fig.2 elements 214 and 220, page 5 lines 13-17) to correspond to an appropriate gain that is determined in part based upon the encoding bits (page 6 lines 18 – page 7 line 2); and
 - amplifying the at least one subsequent data symbol (Fig.1) with the appropriate gain (Fig.2 elements 214, 220, and page 6 lines 18-21).
- In regard claim 5, the admitted prior art of the instant application further teaches sampling a portion of the one symbol corresponding to the encoded bits (Fig.1 and Fig.2 elements 210-224, and page 5 lines 4-22); and performing a discrete

Fourier Transform on the encoded bits (Fig.2 elements 224 and page 5 lines 4-22).

- In regard claim 6, the admitted prior art of the instant application further teaches decoding the at least one subsequent data symbol (Fig.2 elements 224-232 and page 5 line 20 – page 6 line 17) using a fast Fourier transform (Fig.2 element 224) and a Viterbi decoding process (Fig.2 element 232).
- In regard claim 7, the admitted prior art of the instant application further teaches setting an initial gain based upon at least one power estimation algorithm applied to a plurality of training symbols within the packet which precede the one symbol (page 5 line 18 – page 6 line 2).
- In regard claim 8, the admitted prior art of the instant application further teaches the encoding bits provide data rate information (Fig.1 and page 4 line 21 – page 5 line 3).
- In regard claim 9, the admitted prior art of the instant application further teaches the encoding bits provide data rate information (Fig.1 and page 4 line 21 – page 5 line 3).
- In regard claim 10, the admitted prior art of the instant application further teaches the encoding bits provide data rate information and modulation type information (Fig.1 and page 4 line 21 – page 5 line 3).
- In regard claim 11, the admitted prior art of the instant application further teaches that there are a plurality of other symbols and a plurality of corresponding guard

intervals between the one symbol and the subsequent data symbol (Fig.1 and page 4 line 16 – page 5 line 3).

- In regard claim 12, the admitted prior art of the instant application further teaches data symbols that are subsequent to the at least one subsequent data symbol and which are part of the same packet are amplified with the appropriate gain (page 6 line 18 – page 7 line 2).
- In regard claim 39, which is an operation claim related to claim 1, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 40, the admitted prior art of the instant application further teaches that the first type of encoding is BPSK and the plurality of second types of encoding include different sizes of quadrature amplitude modulation constellations (page 1 lines 13-19).
- In regard claim 41, the admitted prior art of the instant application further teaches that the first type of encoding is at a first data rate and the one of the plurality of identified second type of encoding is at a second data rate different from the first data rate (page 5 lines 1-3).
- In regard claim 42, the admitted prior art of the instant application further teaches that the second data rate is faster than the first data rate (page 1 lines 13-19).
- In regard claim 57, which is an operation claim related to claim 6, all limitation is contained in claim 6. The explanation of all the limitation is already addressed in the above paragraph.

- In regard claim 58, which is an operation claim related to claim 7, all limitation is contained in claim 7. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 59, which is an operation claim related to claim 8, all limitation is contained in claim 8. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 60, which is an operation claim related to claim 9, all limitation is contained in claim 9. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 61, which is an operation claim related to claim 10, all limitation is contained in claim 10. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 72, which is an apparatus claim related to claim 1, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 73, which is a means function claim related to claim 1, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 76, the admitted prior art of the instant application further teaches that decoding includes a decoder that decodes both the encoding bits and the at least one subsequent data symbol (Fig.2 and page 5 line 4 – page 7 line 2).

- In regard claim 82, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 84, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 86, all limitation is contained in claim 58. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 87, all limitation is contained in claim 8. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 88, all limitation is contained in claim 9. The explanation of all the limitation is already addressed in the above paragraph.
- In regard claim 89, all limitation is contained in claim 10. The explanation of all the limitation is already addressed in the above paragraph.

Allowable Subject Matter

7. Claims 62-71 and 78-80 are allowed.
8. Claims 2-4, 13-38, 43-56, 74, 75, 77, 81, 83, and 85 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Reference(s) US 6,009,129 are cited because they are put pertinent to the receiver with automatic gain control. However, none of references teach detailed connection as recited in claim.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M. Wang

Ted M Wang
Examiner
Art Unit 2634



SHUWANG LIU
PRIMARY EXAMINER